

General Biology

POLLINATION SUCCESS AND MULTIPLE PATERNITY IN *ACACIA BREVISPICA* FROM EAST AFRICA, Michelle Marshall*, Adriana Otero Arnaiz, Leila Mbazogh Ndong, and Andrew Schnabel*, Department of Biological Sciences, 1700 Mishawaka Ave., P.O. Box 7111, South Bend, IN 46634, miclmars@indiana.edu

The woody vegetation in semi-arid regions of East Africa is predominantly composed of acacia trees that sustain a large portion of the habitat's herbivores. Acacias yield surprisingly few fruits and seeds compared to the number of flowers produced, and though this phenomenon has been studied extensively in Australian species, the mating systems of African acacias are largely undocumented. We are examining levels of pollination and multiple paternity in *Acacia brevispica*, a widespread species in Kenya where field sites are located. To study pollination frequency, 5-10 inflorescences were collected from each of 40 trees in three populations of *A. brevispica* around Mpala Research Center, Laikipia, Kenya. Five pistils were extracted from each inflorescence, and presence or absence of polyads in the stigmas was examined using perarosaniline staining microscopy. The data suggest that fewer than 10% of the stigmas received pollen and of these, the vast majority contained pollen from only one father. We are investigating the genetic evidence for multiple paternity by using microsatellite markers to determine whether fruits are singly-sired. Markers are amplified at 27 loci with approximately 8-13 alleles per locus. Allelic polymorphism is high and most loci exhibit 1 or 2 common alleles and several much rarer alleles. After further experimental refinement, we expect to focus on a smaller set of loci that yield an exclusion probability of 0.97-0.99, which will diminish the likelihood of assigning false paternity. We also plan to broaden our analyses using samples from the current flowering season.